# Sugar Branch (1029 & 1030) Use Attainability Analysis



Boone County Regional Sewer District 1314 North 7<sup>th</sup> Street Columbia, MO 65201-3902

Prepared by
Barr Engineering Company
July 2005

## Sugar Branch (1029 & 1030)

Use Attainability Analysis

**Boone County Regional Sewer District** 1314 North 7<sup>th</sup> Street Columbia, MO 65201-3902

July 2005



**Barr Engineering Company** 3236 Emerald Lane Jefferson City, MO 65109 Phone: (573) 636-5331 Fax: (573) 636-5323

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## Field Data Sheets for Recreational Use Stream Surveys

WATER PROTECTION PROGRAM

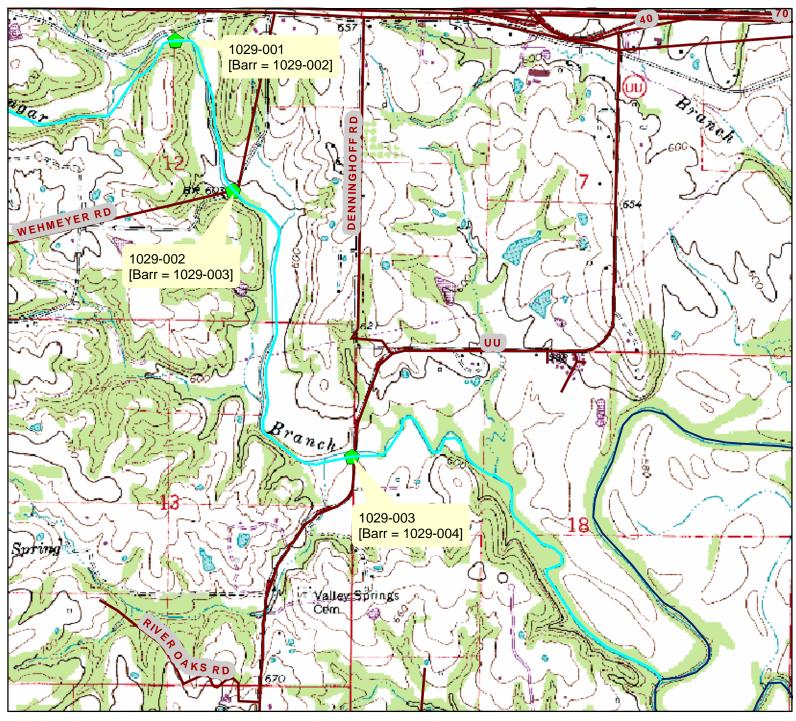
### Data Sheet A - Water Body Identification

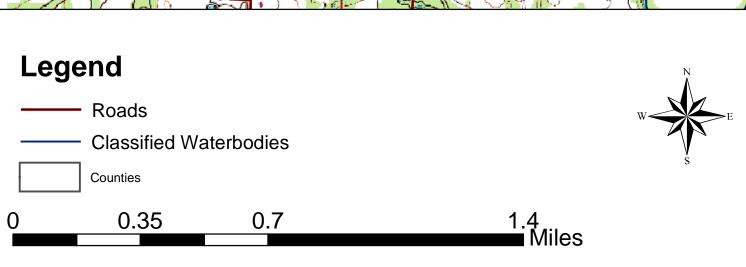
Water Body Name (from USGS 7.5' quad): Sugar Branch
8-digit HUC: 10300102
Missouri WBID #: 1029 and 1030
County: Boone
Upstream Legal Description: Interstate Highway 70 Crossing (NE 1/4 Section 10, T48N, R14W)
Downstream Legal Description: Mouth (in SE 1/4 Section 18, T48N, R13W)
Upstream Coordinates: UTM (Z15N) 545250E; 4313873N
Downstream Coordinates: UTM (Z15N) 549896E; 4310607N
Discharger Facility Name(s): Boone County Regional Sewer District-Rollingwood Subdivision Plt 2, Permit # MO0038806 Boone County Regional Sewer District-Trails West Subdivision, Permit # MO0092002 Total Restoration Company, Permit # MO0124711
Discharger Permit Number(s): See Above.
Number of Sites Evaluated: 4
Name of Surveyor and Telephone Number: Alan Fandrey (573-638-5013)
Organization: Barr Engineering Company
Position: Civil Engineer

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

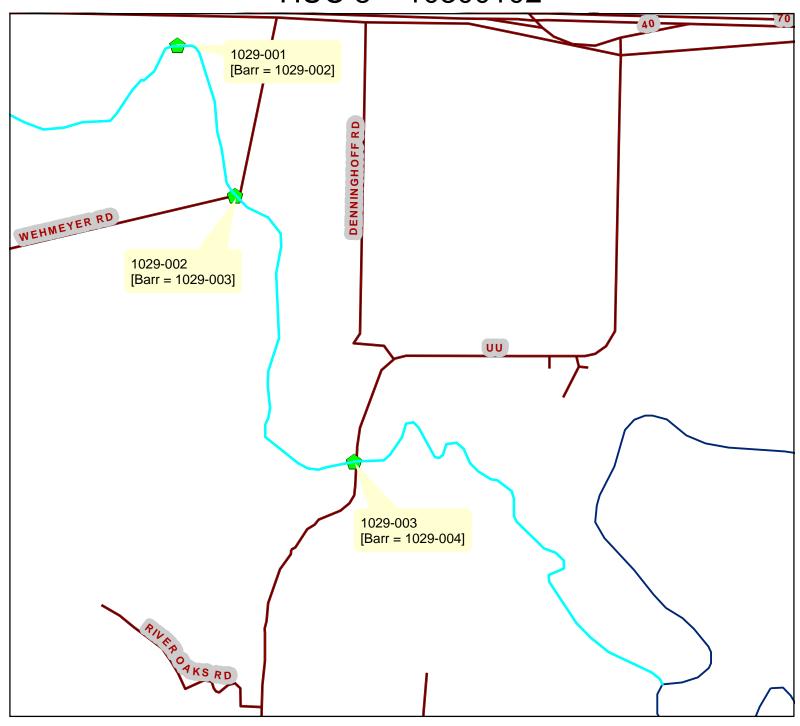
Signed:	alan	Kaul	2	·	_Date: _	June	29, 2005	
		· /						

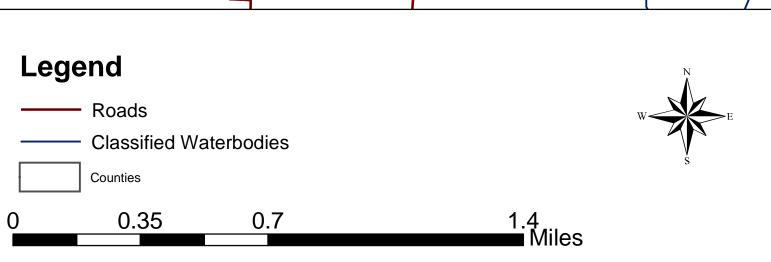
## Sugar Branch (P) #1029 Boone County HUC 8 = 10300102



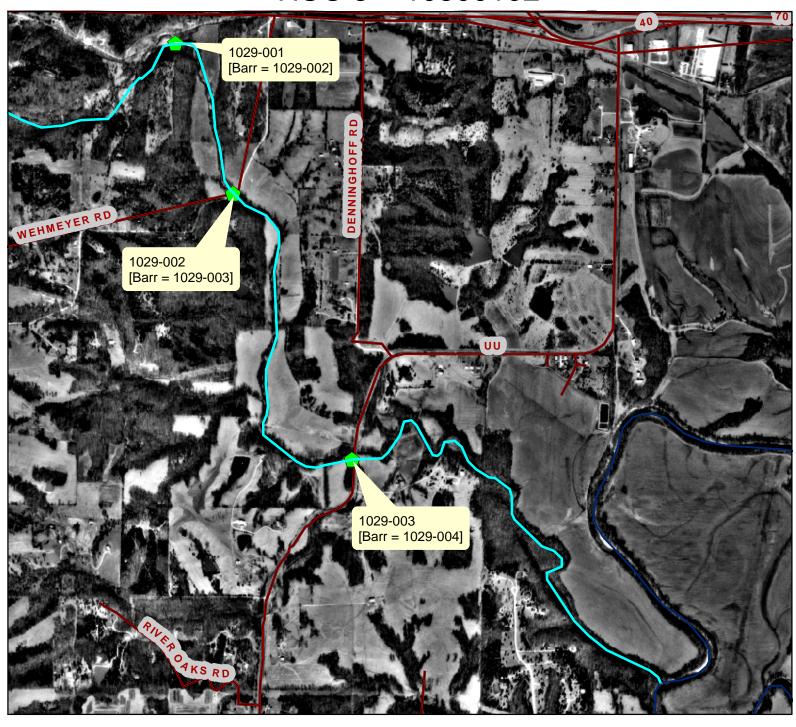


## Sugar Branch (P) #1029 Boone County HUC 8 = 10300102





## Sugar Branch (P) #1029 Boone County HUC 8 = 10300102







0 0.35 0.7

1.4 ■ Miles

#### **Data Sheet B - Site Characterization**

(A separate data sheet must be completed for each site)

1	9-001		Site Location Description: Sugar Branch at crossing of South I-70			
Site GPS Coordinates: 5	545250E; 4313873N		Outer road (in NE ¼ Section 10, T48N, R14W; BID 26 – Boone County			
Date & Time: 05/27/05	- 8:20 a.m.		Facility Name:	See Table 2		
Personnel: Tim J. Fandr	ey		Permit Number:	See Table 2		
Current Weather Condition	ions: Clear - 70s		Weather Conditi	ions for Past 7 days: Last ra	nin on May 22	
Photo Ids: Upstream: 1	029-001US Dow	vnstream: 102	29-001DS Other	r:		
ses Observed*:						
Swimming	☐ Skin diving	□ scu	UBA diving	☐ Tubing	☐ Water skiing	
☐ Wind surfing	☐ Kayaking	□ Воа	ating	□ Wading	Rafting	
Hunting	☐ Trapping	☐ Fish	hing	☑ None of the above	Other:	
Ü	<b>1S*:</b> (Mark all that p	promote or imp	pede recreational u	uses. Attach photos of evide	nce or unusual	
urrounding Condition ems of interest.)  City/county parks	<b>ns*:</b> (Mark all that p  ☐ Playgrounds	_	pede recreational u	uses. Attach photos of evide	1	
ems of interest.)	-	_	nservation lands	-		
ems of interest.)  City/county parks	☐ Playgrounds	☐ MDC cor	nservation lands	☐ Urban areas	☐ Campgrounds	
ems of interest.)  City/county parks  Boating accesses  No trespass sign	☐ Playgrounds ☐ State parks ☐ Fence	☐ MDC cor	nservation lands	☐ Urban areas ☐ Nature trails	☐ Campgrounds	
ems of interest.)  City/county parks  Boating accesses	☐ Playgrounds ☐ State parks ☐ Fence	☐ MDC cor ☐ National: ☐ Steep slo	nservation lands	☐ Urban areas ☐ Nature trails	☐ Campgrounds	
ems of interest.)  City/county parks  Boating accesses  No trespass sign	☐ Playgrounds ☐ State parks ☐ Fence	☐ MDC cor ☐ National ☐ Steep slop	nservation lands forests pes	☐ Urban areas ☐ Nature trails ☐ Other:	☐ Campgrounds ☐ Stairs/walkway	

<sup>\*</sup>Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

## **Data Sheet B - Site Characterization**

**Page Two – WBID #1029-001:** 

Stream Morph Upstream V	ology: iew Physical Dim	ensions:				
	/idth (ft): 0.5	Length (ft): 3.0	Avg. Depth (f	t): 0.1	Max. Depth (ft):	0.1
☐ Run W	Vidth (ft):	Length (ft):	Avg. Depth (f	ft):	Max. Depth (ft):	
☐ Pool W	/idth (ft):	Length (ft):	Avg. Depth (f	ît):	Max. Depth (ft):	
⊠ Flow P	resent? Xes	] No	Estimated (ft <sup>3</sup>	/sec): < 0.1		
Downstrean	n View Physical D	imensions:				
	Vidth (ft): 0.7	Length (ft): 2.0	Avg. Depth (	ft): 0.1	Max. Depth (ft):	0.1
☐ Run V	Vidth (ft):	Length (ft):	Avg. Depth (	ft):	Max. Depth (ft):	
☐ Pool V	Vidth (ft):	Length (ft):	Avg. Depth (	ft):	Max. Depth (ft):	
		] No		3/sec): Same a	as above	
	hese values should add		1	0/ 0:14	200/ 14-1/01	0/ D - 11
<u> %</u> C	Cobble 60% (	Gravel 10% San	nd	% Silt	30% Mud/Clay	% Bedrocl
None Water Charac	eteristics*: (Mark al	I that apply.)				
Odor:	Sewage		hemical	None None	Other:	
Color:	☐ Clear	Green G	iray	☐ Milky	Other:	
Bottom Depo	sit: Sludge	☐ Solids         F	ine sediments	☐ None	Other:	
Surface Depo	osit: 🔲 Oil	Scum F	oam	None None	Other:	
*This information comprehensive ur decision on the re  I, the undersignatasheet is tr	is not to be used solely derstanding of water concreation use analysis by gned, hereby affirmed and accurate.	nal comments (includ y for removal of a recreati conditions. Consequently, ut may point to conditions m to the best of my k	ional use desigr this informatio that need furth	nation but rath n is not intender ar analysis or	er is to provide a more led to directly influence that effect another use.	a
Signed:	Clu to	inf	Date:	May 27, 20	05	
Organization:_	Barr Engineering	Company	Position	n: Engi	ineer	



Photo ID 1029-001US: Upstream (Sugar Branch)



Photo ID 1029-001DS: Downstream (Sugar Branch)

#### **Data Sheet B - Site Characterization**

(A separate data sheet must be completed for each site)

Missouri WBID #: 1029	9-002		Site Location Description: Sugar Branch adjacent to road in North ½			
Site GPS Coordinates: 5	547812E; 4313739N		Section 12; T48N; R14W; BID 28 – Boone County			
Date & Time: 06/26/05	- 3 p.m.		Facility Name: S	See Table 2		
Personnel: Alan J. Fand	rey		Permit Number:	See Table 2		
Current Weather Conditi	ions: Clear - 90s		Weather Condition	ons for Past 7 days: Last ra	in on June 13	
Photo Ids: Upstream: 1	029-002US Dow	vnstream: 102	9-002DS Other	:		
	l .					
Jses Observed*:		1				
Swimming	☐ Skin diving	☐ SCI	UBA diving	☐ Tubing	☐ Water skiing	
☐ Wind surfing	☐ Kayaking	□ Воа	ating	Wading	Rafting	
Hunting	☐ Trapping	☐ Fish	hing	None of the above	Other:	
Describe: (include numb	er of individuals rec	reating, freque	ency of use, photo-	documentation of evidence	of recreational uses, etc.)	
urrounding Condition	ns*• (Mork all that r	promoto or im	nada ragrantional u	sos. Attach photos of avido	nco or unusual	
currounding Condition ems of interest.)	<b>ns*:</b> (Mark all that p	promote or imp	pede recreational u	ses. Attach photos of evide	nce or unusual	
O	<b>ns*:</b> (Mark all that p	·	pede recreational u nservation lands	ses. Attach photos of evide	nce or unusual	
ems of interest.)	T_	·	nservation lands	· T_	I	
ems of interest.)  City/county parks	☐ Playgrounds	☐ MDC cor	nservation lands	☐ Urban areas	☐ Campgrounds	
ems of interest.)  City/county parks  Boating accesses	☐ Playgrounds ☐ State parks ☐ Fence	☐ MDC cor	nservation lands	☐ Urban areas ☐ Nature trails	☐ Campgrounds	
ems of interest.)  City/county parks  Boating accesses  No trespass sign	☐ Playgrounds ☐ State parks ☐ Fence	☐ MDC cor ☐ National ☑ Steep slo	nservation lands	☐ Urban areas ☐ Nature trails	☐ Campgrounds	
ems of interest.)  City/county parks  Boating accesses  No trespass sign	☐ Playgrounds ☐ State parks ☐ Fence	☐ MDC cor ☐ National ☑ Steep slo	nservation lands forests pes	☐ Urban areas ☐ Nature trails ☐ Other:	☐ Campgrounds ☐ Stairs/walkway	

<sup>\*</sup>Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

## Data Sheet B - Site Characterization

Page Two - WBID #<u>1029-002</u>:

Vight Physical Dimensions:	
Run   Width (ft):   Length (ft):   Avg. Depth (ft):   Max. Depth (ft):     Pool   Width (ft): 8   Length (ft): 30   Avg. Depth (ft): 1.5   Max. Depth (ft): 2   Flow   Present?   Yes   No   Estimated (ft²/sec): 0.1    Downstream View Physical Dimensions:	1
Pool   Width (ft): 8   Length (ft): 30   Avg. Depth (ft): 1.5   Max. Depth (ft): 2	
Present?   Yes   No   Estimated (ft³/sec): 0.1    Downstream View Physical Dimensions:	<u> </u>
Riffle Width (ft): Length (ft): Avg. Depth (ft): Max. Depth (ft):     Run Width (ft): Length (ft): Avg. Depth (ft): Max. Depth (ft):     Pool Width (ft): 10 Length (ft): 50 Avg. Depth (ft): 0.8 Max. Depth (ft): 1   Flow Present?	
Riffle Width (ft): Length (ft): Avg. Depth (ft): Max. Depth (ft):     Run Width (ft): Length (ft): Avg. Depth (ft): Max. Depth (ft):     Pool Width (ft): 10 Length (ft): 50 Avg. Depth (ft): 0.8 Max. Depth (ft): 1   Flow Present?	
Run Width (ft):    Run Width (ft): Length (ft): Avg. Depth (ft): Max. Depth (ft):   Pool Width (ft): 10	
Pool Width (ft): 10   Length (ft): 50   Avg. Depth (ft): 0.8   Max. Depth (ft): 1	
Second   S	
Substrate*: (These values should add up to 100%.)    30% Cobble   50% Gravel   20% Sand   % Silt   % Mud/Clay	l
30% Cobble   50% Gravel   20% Sand   % Silt   % Mud/Clay	
30% Cobble   50% Gravel   20% Sand   % Silt   % Mud/Clay	-
quatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)  None    Vater Characteristics*: (Mark all that apply.)   Odor:	
None	% Bedrock
Color: Clear Green Gray Milky Other:  Bottom Deposit: Sludge Solids Fine sediments None Other:  Surface Deposit: Oil Scum Foam None Other:  Omments: Please attach additional comments (including information from interviews) to this form.  his information is not to be used solely for removal of a recreational use designation but rather is to provide a more imprehensive understanding of water conditions. Consequently, this information is not to be used solely for removal of a recreational use designation but rather is to provide a more imprehensive understanding of water conditions. Consequently, this information is not to be used solely for removal of a recreational use designation but rather is to provide a more imprehensive understanding of water conditions.	
Bottom Deposit: Sludge Solids Fine sediments None Other:  Surface Deposit: Oil Scum Foam None Other:  omments: Please attach additional comments (including information from interviews) to this form.  This information is not to be used solely for removal of a recreational use designation but rather is to provide a more imprehensive understanding of water conditions. Consequently, this information is not to be used solely for removal of a recreational use designation but rather is to provide a more imprehensive understanding of water conditions. Consequently, this information is not to be used solely for removal of a recreational use designation but rather is to provide a more	
Surface Deposit: Oil Scum Foam None Other:  omments: Please attach additional comments (including information from interviews) to this form.  This information is not to be used solely for removal of a recreational use designation but rather is to provide a more mprehensive understanding of water conditions. Consequently, this information is not to be used solely for removal of a recreational use designation but rather is to provide a more mprehensive understanding of water conditions.	
omments: Please attach additional comments (including information from interviews) to this form.  This information is not to be used solely for removal of a recreational use designation but rather is to provide a more mprehensive understanding of water conditions. Consequently, this information is not in the last of the conditions.	
his information is not to be used solely for removal of a recreational use designation but rather is to provide a more apprehensive understanding of water conditions. Consequently, this information is not in the last of the conditions.	
the undersigned, hereby affirm to the best of my knowledge, that all information reported on tasheet is true and accurate.	
gned: Date: June 27, 2005	his UAA
rganization: Barr Engineering Company Position: Engineer	his UAA -



Photo ID 1029-002US: Upstream (Sugar Branch)



Photo ID 1029-002DS: Downstream (Sugar Branch)

#### **Data Sheet B - Site Characterization**

(A separate data sheet must be completed for each site)

Missouri WBID #: 1029-	.003		Site Location Description: Sugar Branch at bridge in South ½			
Site GPS Coordinates: 54	48005E; 4313010N		Section 12, T48N, R14W; BID 27 – Boone County			
Date & Time: 05/27/05 -	8:50 a.m.		Facility Name:	See Table 2		
Personnel: Tim J. Fandre	y		Permit Number:	See Table 2		
Current Weather Condition	ons: Clear - 70s		Weather Conditi	ions for Past 7 days: Last ra	in on May 22	
Photo Ids: Upstream: 10	29-003US Dow	nstream: 102	9-003DS Other	r:		
J Ob	<b>,</b>		<b>'</b>			
Jses Observed*:  ☐ Swimming	☐ Skin diving		JBA diving	☐ Tubing	☐ Water skiing	
☐ Wind surfing	☐ Kayaking	☐ Boa		Wading	Rafting	
	☐ Kayaking ☐ Trapping	Fish		None of the above	Other:	
Hunting	11 0			documentation of evidence		
Surrounding Condition	<b>S*:</b> (Mark all that p	romote or imp	pede recreational u	uses. Attach photos of eviden	nce or unusual	
tems of interest.)	Playgrounds	☐ MDC som	nservation lands	☐ Urban areas	Components	
☐ City/county parks					Campgrounds	
☐ Boating accesses	☐ State parks	National 1		☐ Nature trails	☐ Stairs/walkway	
No trespass sign	⊠ Fence	☐ Steep slop	pes	Other:		
Evidence of Human Use	<u>.</u> *•					
Roads	☐ Foot paths/prin	its D	ock/platform	☐ Livestock Watering	RV / ATV Tracks	
☐ Rope swings	☐ Camping Sites	☐ Fi	re pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	
Other:		-				

<sup>\*</sup>Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

## **Data Sheet B - Site Characterization**

## Page Two - WBID #<u>1029-003</u>:

Stream Morpho						
	w Physical Dim					
	dth (ft):	Length (ft):	Avg. Depth	(ft):	Max. Depth (ft)	
Run Wie	dth (ft):	Length (ft):	Avg. Depth	(ft):	Max. Depth (ft):	
Pool Wie	dth (ft): 2.0	Length (ft): 8	Avg. Depth	(ft): 0.8	Max. Depth (ft):	: 1.1
☐ Flow Pre	sent? Xes	] No	Estimated (fi	<sup>3</sup> /sec): 0.2		
Downstream	View Physical D	imensions:				
	dth (ft): 2.0	Length (ft): 2.0	Avg. Depth (		May Donth (ft)	0.0
Run Wio	tth (ft):	Length (ft):	Avg. Depth (		Max. Depth (ft):	
	dth (ft):	Length (ft):		· · · · · · · · · · · · · · · · · · ·	Max. Depth (ft):	· · · · · · · · · · · · · · · · · · ·
	sent? Yes	No	Avg. Depth (		Max. Depth (ft):	<del>-</del>
<u> </u>		INO	Estimated (ft	/sec): 0.2		
Substrate*: (The	se values should add	un to 100%)				
10% Cot	ble 80% G		d	% Silt	% Mud/Clay	% Bedroc
			<del></del>		70 Widd/Clay	70 Bedroci
Water Characte	ristics*: (Mark all	that apply.)				
Odor:	Sewage		emical	None	Other:	
Color:		Green Gr		Milky	Other:	
Bottom Deposit:			ne sediments	None	Other:	
Surface Deposit:	Oil	Scum Fo	am	None	Other:	***
*This information is a comprehensive under decision on the recrea	not to be used solely standing of water contion use analysis but	for removal of a recreation additions. Consequently, the may point to conditions the to the best of my kn	nal use designation is information that need further towledge, the	ation but rather is is not intended to or analysis or that	s to provide a more to directly influence t effect another use.	a
Organization: <u>Ba</u>	r Engineering Co	ompan <b>y</b>	Position	: Enginee	er	



Photo ID 1029-003US: Upstream (Sugar Branch)



Photo ID 1029-003DS: Downstream (Sugar Branch)

#### **Data Sheet B - Site Characterization**

(A separate data sheet must be completed for each site)

	Missouri WBID #: 1029-	-004		Site Location Description: Sugar Branch at Highway UU Bridge (on					
	Site GPS Coordinates: 54	48525E; 4311860N		east line Section 13, T48N, R14W); BID 31 – Boone County					
	Date & Time: 05/27/05 -	1:30 p.m.		Facility Name: S	ee Table 2				
	Personnel: Tim J. Fandre	ey		Permit Number:	See Table 2				
	Current Weather Condition	ons: Partly Cloudy - 7	0s	Weather Condition	ons for Past 7 days: Last ra	in on May 22			
	Photo Ids: Upstream: 10	29-004US Downs	stream: 102	9-004DS Other:					
••									
Us	es Observed*:				l —				
	Swimming	☐ Skin diving	☐ SCU	JBA diving	☐ Tubing	☐ Water skiing			
	☐ Wind surfing	☐ Kayaking	☐ Boa	ting	□ Wading	Rafting			
	☐ Hunting	☐ Trapping	☐ Fish	ing	None of the above	Other:			
	Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual tems of interest.)								
	☐ City/county parks	☐ Playgrounds ☐	MDC con	servation lands	☐ Urban areas	Campgrounds			
	☐ Boating accesses	☐ State parks ☐	☐ National f	Forests	☐ Nature trails	☐ Stairs/walkway			
	☐ No trespass sign	⊠ Fence	Steep slop	pes	Other:				
Ev	idence of Human Use	e* <b>:</b>							
	⊠Roads	☐ Foot paths/prints		ock/platform	☐ Livestock Watering	RV / ATV Tracks			
	☐ Rope swings	☐ Camping Sites	☐ Fi	re pit/ring	☐ NPDES Discharge	☐ Fishing Tackle			
	Other:								

<sup>\*</sup>Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

## **Data Sheet B - Site Characterization**

Page Two - WBID #1029-004:

	_	phology: View Ph	ıysical Din	nensi <i>c</i>	ons:						
	Riffle	Width (ft)			ngth (ft):		Avg. Depth (f	t):	N	fax. Depth (ft):	
	Run	Width (ft)	):	Len	ngth (ft):		Avg. Depth (f	t):	N	fax. Depth (ft):	
×	Pool	Width (ft)	: 17.0	Len	ngth (ft): 30.0		Avg. Depth (f	t): 0.2	N	lax. Depth (ft):	0.4
×	Flow	Present?	Xes [	] No			Estimated (ft <sup>3</sup>	/sec): 0.3			
Do	ownstrea	am View	Physical I	Dime	nsions:						
	Riffle	Width (ft			ngth (ft):		Avg. Depth (f	t):	N	/lax. Depth (ft):	
D	Run	Width (ft	): 1.5	Len	ngth (ft): 11.0		Avg. Depth (f	t): 0.2	N	Max. Depth (ft):	0.3
E	Pool	Width (ft	):	Ler	ngth (ft):		Avg. Depth (f	t):	N	Max. Depth (ft):	
D	☐ Flow	Present?	⊠ Yes [	☐ No			Estimated (ft <sup>3</sup>	/sec): 0.3			
Subs			lues should ac			7 C-		of City	OH .	M. 1/Cl.	Of Dadasala
	%	Cobble	50%	Grave	1 309	% Sa	ina	% Silt	%	Mud/Clay	% Bedrock
Aqua	atic Veg	etation*	: (note amou	nt of ve	egetation or alga	al gro	owth at the asses	sment site)			
N	Vone										
Wate	er Char	acteristi	<b>cs*:</b> (Mark a	ıll that	apply.)						
[	Odor:		Sewage		Musky		Chemical	None None		Other:	
	Color:		⊠ Clear		Green		Gray	Milky		Other:	•
E	Bottom De	posit: [	Sludge		Solids	☐ F	Fine sediments	None None		Other:	
S	Surface De	eposit: [	Oil		] Scum	☐ F	Foam	None None		Other:	
*This	*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.										
I, the	e under sheet is	signed, h true and	nereby affin	rm to	the best of r		knowledge, tl				on this UAA
Sign	ied:	0	jlu z	Ka	ref		Date: <u>I</u>	May 27, 200	5		<u>_</u>
Orga	anization	: Barr E	ngineering	Com	pany		Position	ı: <u>Engi</u> ı	neer	,	



Photo ID 1029-004US: Upstream (Sugar Branch)



Photo ID 1029-004DS: Downstream (Sugar Branch)